

# **Local Caching Nameserver with NetworkManager**

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<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
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<b>REVISION HISTORY</b>
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## 1 Requirements

The machine I'm working on is my notebook. It operates at my home, and also at work. At work, we have an internal private network, with hidden DNS.

- The machine starts NetworkManager at boot
- NetworkManager will use dhclient
- When I'm at work, we have to send queries for the internal names to the internal DNS.
- Whether at work or at home, I want to forward non-private queries to [opendns.org](https://opendns.org)

## 2 The Problem

After installing Fedora F8 I noticed that a local `named` process was running, but I also noticed (using `wireshark`) that queries were not begin sent to it. A quick look at `/etc/resolv.conf` revealed why, it did not contain any reference to the local address. It said

```
# generated by NetworkManager, do not edit!

search md.hnsnet

nameserver xxx.xx.xx.xxx
nameserver yyy.yy.yy.yyy
```

So, we can run a local `named`, but editing `/etc/resolv.conf` to use it will not work, because the changes will get overwritten.

## 3 Implementation

1. Create the file `/etc/dhclient.conf` with this content

```
prepend domain-name-servers 127.0.0.1;
```

This will make sure that your `/etc/resolv.conf` will look like:

```
# generated by NetworkManager, do not edit!

search md.hnsnet

nameserver 127.0.0.1
nameserver xxx.xx.xx.xxx
nameserver yyy.yy.yy.yyy
```

2. Edit `/etc/named.conf` to look like:

```
1 options {
2     listen-on port 53 { 127.0.0.1; };
3     listen-on-v6 port 53 { ::1; };
4     directory    "/var/named";
5     dump-file     "/var/named/data/cache_dump.db";
6     statistics-file "/var/named/data/named_stats.txt";
7     memstatistics-file "/var/named/data/named_mem_stats.txt";
8     allow-query   { localhost; };
9     recursion yes;
10    forwarders { 208.67.222.222; 208.67.220.220; };
```

```
11 };
12
13 logging {
14     channel default_debug {
15         file "data/named.run";
16         severity dynamic;
17     };
18 };
19
20 zone "." IN {
21     type hint;
22     file "named.ca";
23 };
24
25 zone "your.private.zone" IN {
26     type forward;
27     forwarders { xxx.xx.xx.xxx; yy.yy.yy.yyy; };
28 };
29
30
31 include "/etc/named.rfc1912.zones";
```

This is a caching nameserver, but I added two things. Line 10 sets up to forward queries to `opendns.org`. Lines 25--28 forward queries for the internal network to the internal DNS servers.